```
=> s gyro? and ((comb or interleaved)(3a)(electrodes)) and (gap# or spacing#
or trench##)

           9854 GYRO?
          17846 COMB
          19002 INTERLEAVED
         152703 ELECTRODES
           1300 (COMB OR INTERLEAVED)(3A)(ELECTRODES)
         244655 GAP#
         276918 SPACING#
          11441 TRENCH##
L8           11 GYRO? AND ((COMB OR INTERLEAVED)(3A)(ELECTRODES)) AND (GAP#
 OR
                SPACING# OR TRENCH##)

=> d his


     (FILE 'USPAT' ENTERED AT 16:49:59 ON 14 SEP 1998)
                DELETE HISTORY Y
L1             13 SEARCH (5747961 OR 5581035 OR 5646348 OR 5492596 OR 534985
5 O
L2             13 SEARCH (5747690 OR 5530342 OR 5501103 OR 5361635 OR 575689
5 O
L3             13 SEARCH (5545594 OR 5666258 OR 5543106 OR 5635639 OR 555430
4 O
L4             11 SEARCH (5640133 OR 5506553 OR 5508727 OR 5656777 OR 563564
0 O
L5             50 SEARCH L1 OR L2 OR L3 OR L4
L6              8 S L5 AND ((INTERLEAVED OR COMB)(3A)(ELECTRODES))
L7              8 FOCUS L6 1-8
L8             11 S GYRO? AND ((COMB OR INTERLEAVED)(3A)(ELECTRODES)) AND (G
AP#

=> s l11 not l8

'L11' NOT FOUND

=> s l8 not l7

L9              8 S L7
L10             9 L8 NOT L9

=> focus l10 1-9

PROCESSING COMPLETED FOR L10
L11             9 FOCUS L10 1-9

=> d l11 1-9 cit ab
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1. 5,555,765, Sep. 17, 1996, Gimballed vibrating wheel **gyroscope**;
Paul Greiff, 73/504.09, 504.18 [IMAGE AVAILABLE]

US PAT NO: 5,555,765 [IMAGE AVAILABLE] L11: 1 of 9

ABSTRACT:

A gimballed vibrating wheel **gyroscope** for detecting rotational rates in inertial space. The **gyroscope** includes a support oriented in a first plane and a wheel assembly disposed over the support parallel to the first plane. The wheel assembly is adapted for vibrating rotationally at a predetermined frequency in the first plane and is responsive to rotational rates about a coplanar input axis for providing an output torque about a coplanar output axis. The **gyroscope** also includes a post assembly extending between the support and the wheel assembly for supporting the wheel assembly. The wheel assembly has an inner hub, an outer wheel, and spoke flexures extending between the inner hub and the outer wheel and being stiff along both the input and output axes. A flexure is incorporated in the post assembly between the support and the wheel assembly inner hub and is relatively flexible along the output axis and relatively stiff along the input axis. With this arrangement, the wheel assembly is gimballed on the support. More particularly, the post flexure flexes in response to the output torque; whereas, the spoke flexures allow for the rotational vibration in the first plane. Also provided is a single semiconductor crystal fabrication technique which allows for improved device manufacture.

2. 5,535,902, Jul. 16, 1996, Gimballed vibrating wheel **gyroscope**; Paul Greiff, 216/2, 62, 87; 438/593 [IMAGE AVAILABLE]

US PAT NO: 5,535,902 [IMAGE AVAILABLE] L11: 2 of 9

ABSTRACT:
A gimballed vibrating wheel **gyroscope** for detecting rotational rates in inertial space. The **gyroscope** includes a support oriented in a first plane and a wheel assembly disposed over the support parallel to the first plane. The wheel assembly is adapted for vibrating rotationally at a predetermined frequency in the first plane and is responsive to rotational rates about a coplanar input axis for providing an output torque about a coplanar output axis. The **gyroscope** also includes a post assembly extending between the support and the wheel assembly for supporting the wheel assembly. The wheel assembly has an inner hub, an outer wheel, and spoke flexures extending between the inner hub and the outer wheel and being stiff along both the input and output axes. A flexure is incorporated in the post assembly between the support and the wheel assembly inner hub and is relatively flexible along the output axis and relatively stiff along the input axis. With this arrangement, the wheel assembly is gimballed on the support. More particularly, the post flexure flexes in response to the output torque; whereas, the spoke flexures allow for the rotational vibration in the first plane. Also provided is a single semiconductor crystal fabrication technique which allows for improved device manufacture.

3. 4,708,480, Nov. 24, 1987, Solid-state optical interferometer; Takao Sasayama, et al., 356/350 [IMAGE AVAILABLE]

US PAT NO: 4,708,480 [IMAGE AVAILABLE] L11: 3 of 9

ABSTRACT:
In a solid-state optical interferometer having a light path composed of a loop-shaped optical fiber and a solid-state light wave guide optically coupled to said optical fiber, electrodes for producing a surface acoustic wave (SAW) are formed as a pair on a surface of a substrate on which said solid-state light wave guide is formed, and said surface acoustic wave is used to apply optical modulation to a light beam passing through said solid-state light wave guide.

4. 5,392,650, Feb. 28, 1995, Micromachined accelerometer **gyroscope**; Benedict B. O'Brien, et al., 73/514.18, 514.29 [IMAGE AVAILABLE]

US PAT NO: 5,392,650 [IMAGE AVAILABLE] L11: 4 of 9

ABSTRACT:
An integrated rate and acceleration sensor includes at least one accelerometer formed from a substantially planar silicon body. The at least one micro-silicon accelerometer (MSA) includes a first frame and a proof mass suspended from the first frame by first flexures. The at least one accelerometer has an associated sensitive axis and an associated rate axis that is orthogonally disposed to the sensitive axis. The integrated sensor further includes structure for dithering or vibrating the proof mass along a dither axis that is disposed perpendicularly to both the rate and the sensitive axes. The dithering structure includes at least first and second interdigitated electrodes. Finger portions of the electrodes are disposed for exerting an electrostatic force upon a portion of the planar body in response to an oscillatory drive signal. The portion of the planar body has a plurality of linear grooves formed therein, the plurality of linear grooves being disposed in a parallel orientation with the finger portions. A vibrating accelerometer **gyro** (VAG) structure is constructed by micromachining techniques such that the linear momenta of two vibrating MSAs balance one another. A symmetrical disposition of the vibrating proof masses tends to balance the linear momenta of the MSAs, and increases the resonance amplification factor (Q).

5. 5,500,549, Mar. 19, 1996, Semiconductor yaw rate sensor; Yukihiro Takeuchi, et al., 257/415; 73/514.02, 514.15, 514.36, DIG.1; 257/417, 418, 420 [IMAGE AVAILABLE]

US PAT NO: 5,500,549 [IMAGE AVAILABLE] L11: 5 of 9

ABSTRACT:
A semiconductor yaw rate sensor, which can be structured easily by means of an IC fabrication process, such that a yaw rate detection signal due to a current value is obtained by means of a transistor structure and a method of producing the same is disclosed. A weight supported by beams is disposed at a specified interval from a surface of a semiconductor substrate, and movable electrodes and excitation electrodes are formed integrally with the weight. Fixed electrodes for excitation use are fixed to the substrate in correspondence to the excitation electrodes. Along with this, source electrodes as well as drain electrodes are formed by means of a diffusion layer on a surface of the substrate at positions opposing the movable electrodes, such that drain current changes in correspondence with displacement of the movable electrodes by means of Corioli's force due to yaw rate, and the yaw rate is detected by this current.

6. 4,082,990, Apr. 4, 1978, Electrostatic pickoff and torquer; John Callender Stiles, et al., 318/662; 324/662, 725; 340/870.37 [IMAGE AVAILABLE]

US PAT NO: 4,082,990 [IMAGE AVAILABLE] L11: 6 of 9

ABSTRACT:
An instrument which performs with precision either as a pickoff or torquer and which is not subject to geometrical errors due to the electrodes going out of round. The pickoff electrodes of the instrument are mounted adjacent the end of the movable element instead of being concentric to it. Because of the location of the pickoff electrodes relative to the movable element, the device is a variable area pickoff rather than a variable **gap** pickoff. This provides the advantages of obtaining outputs from the X and Y axes which are a linear function of the motion of the movable element and, therefore, the displacement angle, as determined by the ratio of X and Y outputs, is independent of the amplitude of motion.

7. 5,600,065, Feb. 4, 1997, Angular velocity sensor; Barun K. Kar, et al., 73/504.12, 504.02 [IMAGE AVAILABLE]

US PAT NO: 5,600[illegible]5 [IMAGE AVAILABLE] L11: 7 of 9

ABSTRACT:
Converting a Coriolis force into an electrical signal, an electro-mechanical transducer (10) is a field effect transistor (18) having angular velocity sensing capabilities. A gate electrode (16) is suspended over a channel region (60) of a substrate (31), is biased at a desired potential, and is oscillated along an axis (40). The gate electrode (16) and the substrate (31) are rotated about a different axis (41) at an angular velocity (44). The resulting Coriolis force displaces the suspended gate electrode (16) along yet another axis (42) which modulates a current (53) in the channel region (60) of the substrate (31). The amplitude of the current (53) describes the magnitude of the angular velocity (44).

8. 5,099,386, Mar. 24, 1992, Variable-capacitance position transducing; Brian P. Stokes, et al., 361/298.5; 324/725 [IMAGE AVAILABLE]

US PAT NO: 5,099,386 [IMAGE AVAILABLE] L11: 8 of 9

ABSTRACT:
A variable-capacitance transducer detects the angular position of a rotatable member. The transducer includes a first capacitance plate having a plurality of electrically conductive capacitance electrodes, a second capacitance plate spaced therefrom, and a dielectric element located between the plates. At least two of the electrodes are interconnected by a conductive trace. The dielectric element or one of the plates is fixedly mounted on the rotatable member. The electrodes on the first capacitance plate, in conjunction with the second capacitance plate, form a plurality of capacitances that vary as the angular position of the rotatable member changes. A conductive guard partially envelopes the conductive trace and a conductive guard partially envelopes the electrodes on the first capacitive plate. A spacer defines the distance between the capacitance plates and has a coefficient of thermal expansion and dimensions that cause the distance between the capacitance plates to vary by an amount calculated to compensate for changes in plate area with temperature. The transducer includes a parasitic capacitor plate having a position that is adjustable to compensate for parasitic capacitance. An electromagnetic shield is constructed and positioned, with respect to a driver that controls the rotatable member, such that the shield tends to prevent electromagnetic radiation from the driver from affecting the capacitances between the capacitance plates.

9. 4,032,217, Jun. 28, 1977, Optical wave guide for carrying out phase-tuning between two modes of light propagation; Philippe Coeure, et al., 385/28, 1, 40 [IMAGE AVAILABLE]

US PAT NO: 4,032,217 [IMAGE AVAILABLE] L11: 9 of 9

ABSTRACT:
A dielectric film layer C.sub.2 is deposited on a transparent film layer C.sub.1 in which two optical transverse TE and TM modes propagate and is provided with a metallic coating having reflecting properties on the face which is not in contact with the layer C.sub.1. The thickness of the layer C.sub.2 is such that phase-tuning is effected along the direction of propagation of the two TE and TM waves within the wave guide as essentially constituted by the layer C.sub.1.

=> d his

(FILE 'USPAT' ENTERED AT 16:49:59 ON 14 SEP 1998)
DELETE HISTORY Y
L1 13 SEARCH (5747961 OR 5581035 OR 5646348 OR 5492596 OR 534985

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5 O
L2            13 SEARCH (5747690 OR 5530342 OR 5501103 OR 5361635 OR 575689
5 O
L3            13 SEARCH (5545594 OR 5666258 OR 5543106 OR 5635639 OR 555430
4 O
L4            11 SEARCH (5640133 OR 5506553 OR 5508727 OR 5656777 OR 563564
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L5            50 SEARCH L1 OR L2 OR L3 OR L4
L6             8 S L5 AND ((INTERLEAVED OR COMB)(3A)(ELECTRODES))
L7             8 FOCUS L6 1-8
L8            11 S GYRO? AND ((COMB OR INTERLEAVED)(3A)(ELECTRODES)) AND (G
AP#
L9             8 S L7
L10            9 S L8 NOT L7
L11            9 FOCUS L10 1-9
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